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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,692	12/04/2003	Jingkuang Chen	D/A1591D	8664
7590 12/07/2004				
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER BEREZNY, NEMA O	
			ART UNIT 2813	PAPER NUMBER

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,692

Applicant(s)

CHEN ET AL.

Examiner

Nema O Berezny

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02262004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims 1-20 are currently pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9, 10, and 11 recite the limitation "the first low voltage well" in line 2, 2, and 4, respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-5, 8-11, 13-14, and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Smayling et al. (5,242,841). Smayling discloses a heterogeneous device, comprising: a substrate (Fig.2h el.150); a high voltage well (el.182) of a first circuit device (el.142) defined in the substrate; and a first low voltage device [well?] (el.190) of a second circuit device (el.140) defined in the substrate [**claim 1**]. Smayling also discloses a heterogeneous device, comprising: a substrate (Fig.2h el.150); and a plurality of heterogeneous circuit devices (el.139-149) defined in the substrate [**claim 13**]. Smayling also discloses wherein the substrate comprises a layer of silicon (col.4

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lines 38-43) [**claims 4, 17**]; wherein the layer of silicon comprises p-type silicon (col.4 lines 38-43) [**claims 5, 18**]; further comprising a second low voltage well (el.175) of the second circuit device defined in the substrate [**claim 8**]; further comprising a field oxide layer (el.210) over at least part of each of the high voltage well, the first low voltage well and the second low voltage well [**claim 9**]; further comprising a polysilicon gate (el.204) associated with each of the high voltage well, the first low voltage well and the second low voltage well [**claim 10**]; further comprising a P-body (el.182) defined in the high voltage well of the first circuit device; an N+ source/drain (el.258, 260) defined in each of the P-body, the high voltage well and the first low voltage well (el.254, 256) of the second circuit device; and a P+ source/drain (el.294) in each of the P-body and the second low voltage well (el.284, 286) of the second circuit device [**claim 11**]; and wherein the plurality of heterogeneous circuit devices comprises at least one complementary metal oxide semiconductor transistor and at least one double-diffused metal oxide semiconductor transistor (col.4 lines 57-59) [**claim 14**].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smayling as applied to claims 1, 8-11 and 13 above, and further in view of Shinji

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(5,844,264). Smayling does not disclose a photodiode or contacts extending through a passivation layer. However, Smayling would have looked to one such as Shinji for reducing defects and forming an external connection because Shinji discloses further comprising a photodiode defined in the substrate (col.8 lines 15-31) **[claims 2, 15]**; and further comprising a passivation oxide layer (Fig.20 el.1022) over at least the polysilicon gates (el.1018); a plurality (implied) of vias (no #) through the passivation oxide layer; and a plurality of contacts (el.1023), each of the contacts extending through the vias and contacting at least one of the sources/drains (el.1017) **[claim 12]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the photodiode of Shinji with the device of Smayling in order to reduce defects (Shinji - col.4 lines 49-53); and it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the passivation layer and contact of Shinji with the device of Smayling in order to provide an external connection.

Claims 3, 6-7, 16, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smayling as applied to claims 1 and 13 above, and further in view of Kubena et al. (6,580,138). Smayling does not disclose a microelectromechanical element or an SOI wafer. However, Smayling would look to one such as Kubena for integrating diverse devices and structural stability because Kubena discloses further comprising at least one microelectromechanical system-based element defined in the substrate (col.1 lines 25-28) **[claims 3, 16]**; and wherein the substrate comprises a silicon-on-insulator wafer comprising a single-crystal-silicon layer, a substrate and an

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insulator layer therebetween (col.4 line 66 – col.5 line 8; col.5 lines 17-19), wherein the single-crystal-silicon layer comprises p-type silicon (col.5 lines 50-53) [**claims 6, 7, 19, 20**]. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the microelectromechanical element of Kubena with the device of Smayling in order to integrated several diverse devices together (Smayling – col.1 lines 56-59); and it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the SOI wafer of Kubena with the device of Smayling in order to provide a single crystal MEMS structure with better structural stability (Kubena – col.1 lines 47-63).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nema O Berezny whose telephone number is (571) 272-1686. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NB

Nema Berezny
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